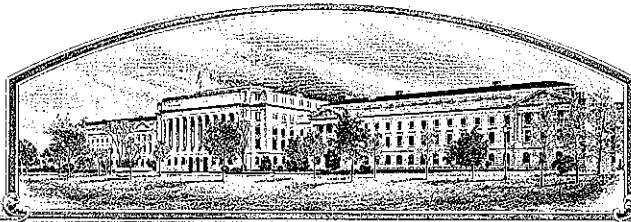


No.

9500277



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrow Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

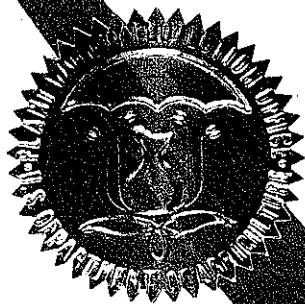
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'A3313'



Attest:

Marsla A. Stanton

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirty-first day of January in the year of our Lord one thousand nine hundred and ninety-seven.

John F. Blitchman
Secretary of Agriculture

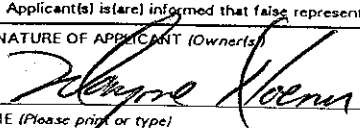
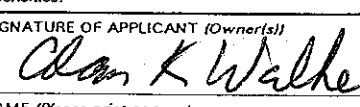
U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Asgrow Seed Company		XP3313	A3313
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER 9500277 DATE Aug. 15, 1995 FILING AND EXAMINATION FEE \$2450.00 DATE Aug. 14, 1995 CERTIFICATION FEE \$300.00 DATE Dec. 12, 1996
2605 E. Kilgore Road Kalamazoo, MI 49002		(616) 384-5548	
6. FAX (include area code)			
(616) 384-5652			
7. GENUS AND SPECIES NAME	8. FAMILY NAME (Botanical)		
Glycine Max	Leguminosae		
9. CROP KIND NAME (Common name)			
Soybean			
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)			
Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
Delaware		March 22, 1968	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			14. TELEPHONE (include area code)
Wayne L. Hoener Asgrow Seed Company 7089-248-24 2605 E. Kilgore Road Kalamazoo, MI 49002			(608) 755-1777
Dr. Alan Walker Asgrow Seed Company 5926 E US HWY 14 Janesville, WI 53546			15. FAX (include area code)
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)?			
<input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		18. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?			
<input type="checkbox"/> YES (If "yes," give names of countries and dates) <input checked="" type="checkbox"/> NO			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.			
The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.			
Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE OF APPLICANT (Owner(s))	
			
NAME (Please print or type)		NAME (Please print or type)	
Wayne L. Hoener		Alan K. Walker	
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Soybean Product Manager	8/21/95	Director of Soybean Research	8-25-95

Asgrow Seed Company
PVP application-Soybean, A3313
November 22, 1994

EXHIBIT A

ORIGIN AND BREEDING HISTORY OF A3313

1986 - Cross made in 1986.
Parentage: A2234/A3935

1986-87 - F1 and F2 generations grown at Isabella, Puerto Rico.
(winter)

1987 - F3 population grown at Ames, Iowa. Three-hundred plants selected from bulk population and threshed individually.

1988 - Progeny row J861418 J88-10987 selected for its uniformity and standability. The row was harvested in bulk and seed coat luster and hilum color noted. In September 1988, J861418 J88-10987 was determined to be a stable, unique line.

1989 - J861418 J88-10987 was entered in the Preliminary II Yield Test P290 and grown at Ames, Iowa, Oxford, Indiana and Stonington, Illinois. J88-10987 was tested for Phytophthora root rot resistance and found to be resistant to race 1.

1990 - J861418 J88-10987 was entered into the S305 Strain Yield Test grown at 9 locations including: Nevada, Iowa; Champaign, Farmer City, Monmouth and Tuscola, Illinois; Muncie and Oxford, Indiana; Kearny, Nebraska; and New Hampshire, Ohio.

J861418 J88-10987 was selected for its yield and standability and assigned the experimental designation X3313.

1991 - X3313 was entered in advanced yield tests grown at 21 locations across the midwest.

X3313 was selected for its yield and standability and renamed XR3313.

1992 - XR3313 was entered in advanced yield tests grown at 19 locations.

continued...

Exhibit A continued...

XR3313 was tested for Phytophthora root rot resistance and found to be resistant to races 1-5, 7-14, 17, 19, 20, 21, 24.

Breeder Seed of XR3313 grown at Stonington, IL. and Oxford, IN.

XR3313 was selected for it's yield and standability and renamed XP3313.

1993 - XP3313 was entered in advanced yield tests grown at 21 locations.

Foundation Seed of XP3313 was produced at Perry, IA.

XP3313 was nominated for release and production and designated A3313.

A3313 is uniform and stable within commercially acceptable limits based on trial observations since its development in 1988. As with other soybean varieties, variants can occur for almost any trait during the course of repeated sexual reproduction.

22 VDC 19 19

new 19 19

Asgrow Seed Company
 PVP application-Soybean, A3313
 November 22, 1994

EXHIBIT B

NOVELTY STATEMENT CONCERNING A3313 SOYBEAN

To our knowledge the soybean varieties that most closely resemble A3313 are A3127, A3237, A3322, Resnik, Pella 86, P9331, P9341, and P9342. Characteristics which differentiate A3313 include, but are not restricted to the following:

	<u>Flower</u> <u>Color</u>	^a <u>PRR</u>	<u>Peroxidase</u>	^b <u>No. Of</u> <u>Days</u> <u>Maturity</u>
A3313	Purple	Rps1k Rps7	High	126
A3127	Purple	rps		
A3237	Purple	Rps1k	Low	
A3322	White	Rps1c		
Resnik	Purple	Rps1k	High	124
Pella 86	Purple	Rps1k	Low	
P9331	Purple	Rps1c		
P9341	White	rps		
P9342	White	Rps1k		

a.) Gene for resistance to Phytophthora megasperma f.sp. glycinea.

b.) Based on comparisons at 4 IL., 2 IN., 1 MD., locations.
 (LSD = .762 days)

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

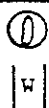
EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Asgrow Seed Company	TEMPORARY DESIGNATION XP3313	VARIETY NAME A3313
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 9638-190-23 Gull Road. Bldg. 190 Kalamazoo, MI 49001		FOR OFFICIAL USE ONLY PVPO NUMBER 9500277

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)

3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)

4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) _____

★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a)2 = Type B (SP1^b)

★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 265A')

★ 10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) _____

11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☐ 31 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

★ 13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

★ 14. POD COLOR:

☐ 1

1 = Tan

2 = Brown

3 = Black

★ 15. PLANT PUBESCENCE COLOR:

☐ 2

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

☐ 21 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

★ 17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

☐ 0 ☐ 61 = 000
9 = VI2 = 00
10 = VII3 = 0
11 = VIII4 = I
12 = IX5 = II
13 = X

6 = III

7 = IV

8 = V

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★

☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☐ 0Bacterial Blight (*Pseudomonas glycinea*)

★

☐ 0Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★

☐ 0Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)

★

☐ 0

Race 1

☐ 0

Race 2

☐ 0

Race 3

☐ 0

Race 4

☐ 0

Race 5

☐ 0

Other (Specify)

☐ 0Target Spot (*Corynespora cassiicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0Powdery Mildew (*Microsphaera diffusa*)

★

☐ 0Brown Stem Rot (*Cephalosporium gregatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

- ★ ☐ 0 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 2 Race 1 ☐ 2 Race 2 ☐ 2 Race 3 ☐ 2 Race 4 ☐ 2 Race 5 ☐ 0 Race 6 ☐ 2 Race 7
- ☐ 2 Race 8 ☐ 2 Race 9 ☐ 2 Other (Specify) Race 10-14, 17, 19, 20, 21, 24

VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 0 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 1 Race 3 ☐ 0 Race 4 ☐ 1 Other (Specify) Race 14
- ☐ 0 Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ 0 OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 1 Iron Chlorosis on Calcareous Soil
- ☐ 0 Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ 0 Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	A3237	Seed Coat Luster	A3322
Leaf Shape	A3935	Seed Size	A3935
Leaf Color	A3322	Seed Shape	A3237
Leaf Size	A3935	Seedling Pigmentation	A3237

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
A3313 Submitted	126	1.4	87	7.5	11.5	41.0	20.4	15.1	3
A3237 Name of Similar Variety	125	1.6	85	8.0	10.5	41.0	21.0	15.6	3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Asgrow Seed Company
PVP application-Soybean, A3313
November 22, 1994

EXHIBIT D

Additional Description of the Variety

A3313 is an early group III cultivar that possesses outstanding and consistent yields relative to other cultivars of similar maturity. A3313 combines the Rps_1^k Rps_7 gene for Phytophthora resistance with excellent standability and emergence.

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Asgrow Seed Company
PVP application-Soybean, A3313
November 22, 1994

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

A3313 was originated and developed by Craig K. Moots, Ph.D., an Asgrow Plant Breeder. By agreement between employee and Asgrow Seed Company, all rights to any invention, discovery, or development made by an employee are assigned to the Company. No rights to such invention, discovery, or development are retained by the employee.

02 NOV 1994

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